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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,791	11/13/2001	Tomoki Nobuta	NEC01P192	6103
466	7590	10/10/2003	EXAMINER	
YOUNG & THOMPSON			WILLS, MONIQUE M	
745 SOUTH 23RD STREET 2ND FLOOR			ART UNIT	
ARLINGTON, VA 22202			PAPER NUMBER	

1746

DATE MAILED: 10/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/986,791

Applicant(s)

NOBUTA ET AL.

Examiner

Wills M Monique

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Priority***

Japanese foreign priority document(s) 2000-345256, filed November 13, 2000 and submitted under 35 U.S.C. 119(a)-(d), has/have been received and placed of record in the file.

### ***Information Disclosure Statement***

The information disclosure statement(s) filed November 13, 2001 has/have been received and complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 .

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 & 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiyama et al. U.S. Patent 6,300,015 in view of Kazacos et al. U.S. Patent 2001/0028977.

Nishiyama teaches a proton conductive polymer battery comprising positive electrode (2) and negative electrode (4) arranged facing each other via a separator in an electrolyte (Fig. 8 and col. 12, lines 60-65). The positive electrode comprises a polymer compound having a hydroxyl group (col. 4, lines 55-65) and may also be selected from the group consisting of polyaniline and polydiaminoanthraquinone (col. 5, lines 15-20). The negative electrode comprises polypyridine or polypyrimidine (col. 4, lines 20-25). The negative electrode participates in the charge/discharge (col. 11, lines 15-50). The electrolyte may contain sulfuric acid and quaternary ammonium salts (col. 5, lines 50-50).

Nishiyama does not expressly disclose the electrolyte solution containing a proton concentration of 5 to 40% (sulfuric acid of claims 2 & 5) or an anion concentration of 30 to 60% (hydrogensulfate of claims 2 & 6).

Kazacos teaches that it is conventional to control the proton concentration in sulfuric acid electrolyte to stabilize the ions at elevated temperatures (par. 24). The proton concentration of the sulfuric acid electrolyte is less than 90% (par. 409 and Table B\*).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the sulfuric acid proton concentration of

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Kazacos in the sulfuric acid electrolyte of Nishiyama in order to stabilize the ions at elevated temperatures.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 & 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiyama et al. U.S. Patent 6,300,015 in view of Kazacos et al. U.S. Patent 2001/0028977.

Nishiyama teaches a proton conductive polymer battery comprising a sulfuric acid electrolyte and quaternary ammonium salts as described hereinabove.

The reference is silent to an electrolyte comprising potassium hydrogensulfate or quaternary ammonium hydrogen sulfate.

Kazacos teaches the equivalence of quaternary ammonium salts, potassiumhydrogensulfate and ammonium hydrogen sulfate (Par. 449).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the ammonium salts of Nishiyama with potassium and ammonium hydrogensulfates, since Kazacos teaches the function equivalents of the aforementioned electrolyte salts.

**Conclusions**

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (703) 305-0073. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

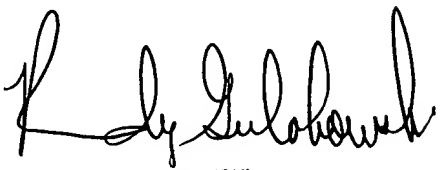
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Randy Gulakowski, may be reached at 703-308-4333.

The unofficial fax number is (703) 305-3599. The Official fax number for non-final amendments is 703-872-9310. The Official fax number for after final amendments is 703-872-9311.

Mw

09/26/03

  
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